DOCUMENT RESUME

ED 346 723 FL 020 430

AUTHOR Molina, Huberto; And Others
TITLE Do Students from Bilingual Families Have Higher Achievement Levels than Monolingual Students in High School?
PUB DATE Apr 92
NOTE 18p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 20-25, 1992).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Beginning Reading; *Bilingual Students; Comparative Analysis; Elementary Secondary Education; Grade 1; High Schools; High School Students; Kindergarten; Language Dominance; Language Research; *Monolingualism; *Reading Skills

ABSTRACT

This paper examines the schooling achievement of children from bilingual homes and compares them to comparable samples of children from monolingual homes. Extensive follow-up data were gathered in 1985 on a sample of approximately 4,000 high school seniors who entered kindergarten in 1973 as part of a Kindergarten Reading Follow-up (KRF) program. Data included dominant language spoken in the home. Nearly 500 students were from bilingual families. The primary study instrument used was "The Reading Biographer," a booklet designed to measure the schooling history of students from preschool through high school. The major conclusion from the 1985 KRF study was that the student who received initial reading instruction in kindergarten, as compared to those receiving it in first grade, clearly emerged as better readers as high school seniors across all ethnic, social class, and bilingual groups. The current study confirms previous findings and indicates that bilingual students generally are not at a disadvantage in terms of standard educational measures taken in high school. It also supports the most recent arguments that bilingualism has little effects on the general achievement levels of children. It is noted that since more bilingual than monolingual children participated in a beginning reading program in kindergarten, that variable should be examined further. Contains 23 references. (LB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED346722

Do Students From Bilingual Families Have Higher Achievement Levels Than Monolingual Students In High School?[1]

Huberto Molina
California State University, Northridge

Donna Farrell Siegel
University of Science and Arts of Oklahoma

Ralph A. Hanson
Hanson Research Systems
Garden Grove, CA

[1]Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA, April 20-25,1992

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Huberto Molina

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

FL 020 430

Do Students From Bilingual Families Have Higher Achievement Levels Than Monolingual Students In High School?

Is being Bilingual a help or a hindrance to students in regard to their ability to do well in school? There is little agreement about the effects of bilingual background on the schooling achievement of children (Hakuta and Pease-Alvarez, 1992; Lewelling, 1991). Much of the early research contended that bilingualism could have a harmful effect on children's intellectual development (e.g., Yoshioka, 1929; Smith, 1931, 1939; Anastasi and Cordova, 1953). More recent studies, however, have suggested that bilingualism may actually be beneficial to cognitive ability (Peal and Lambert, 1962; Ben-Zeev, 1977; Duncan and DeAvila, 1979; Goldsmat, 1982; Cummins, 1982). Still, many educators, parents, and policy makers argue that bilingualism hinders the mastery of English and, therefore, the ability to do well in school and, eventually, the work place (e.g., Youth Policy, 1983; Crawford, 1989).

Two recent reviews of the literature have provided some middle ground for this debate, as well as confirming the need for additional research on the effects of bilingualism on students' overall intellectual achievement. Hakuta (1986) discussed many of the myths and misconceptions about bilingualism that clouded the ability of early researchers to reach valid conclusions about bilingual populations. These included the assumption of inferior intelligence based on

anti-immigrant attitudes and the use of English-language IQ tests. Hakuta concluded from his review that, all other things being equal, bilingualism has little or no influence on the general intellectual abilities of children; however, if effects were to be found, they would probably be positive. Cummins (1989), after reviewing the research on academic, linguistic, and intellectual effects of bilingualism, reached the same conclusion. He contends that, while not conclusive, the evidence points in the direction of subtle metalinguistic, academic, and intellectual benefits for bilingual students.

One of the difficulties in researching this issue and testing these hypotheses is that a longitudinal/ developmental approach has not been taken. As a result, most studies are of short duration and the effects obtained are inconclusive and may even change over time. Put another way, it is difficult to find studies using longitudinal data comparing the schooling achievement of bilingual and monolingual students from the same social class backgrounds and who attended the same elementary and high schools.

Purpose

This paper examines the schooling achievement of children from bilingual homes and compares them to comparable samples of children from monolingual homes. The purpose is to determine if children who have had the experience of growing up bilingual will display achievement levels that are

below, the same, or higher than their monolingual peers from the same social class background.

Extensive follow-up data were gathered on a sample of about 4,000 high school seniors who entered kindergarten in the fall of 1973 as part of a follow-up study on a kindergarten reading program. These data included the name(s) of the grade school(s) attended and the dominant language spoken in the home, as well as numerous dependent variables such as scores on norm-referenced tests of reading and vocabulary, their usual grades in reading and English classes, the number and kind of remedial experiences, and the number of people in their immediate family. These data, and the availability of a substantial sample of students from bilingual families (n=496), allow the examination of the research question, "Do students with a bilingual background do better, about the same, or less well on reading, vocabulary, and other competence outcome measures as high school seniors?"

Method

The study employed a follow-up study design which included a sample of 3,959 students from a population of over one hundred and twenty thousand students. They were from 5,000 elementary schools (430 districts) across the country that used an innovative kindergarten reading program in the 1973-74 school year (Hanson and Schutz, 1978). A sample of those districts were contracted in 1985 and agreed to take

part in a Kindergarten Reading Follow-up (KRF) Study. These 3,959 students were in their senior year in high school at that time.

The major study instrument used was The Reading Biographer; a booklet specifically designed to measure the schooling history of students from preschool through high school. This instrument gathered detailed information on each student's family background, language usage, schools attended, and educational experiences, as well as standardized measures of reading comprehension and reading vocabulary.

The major conclusion from the 1985 KRF Study was that the students who received initial reading instruction in kindergarten, as compared to those receiving it in first grade, clearly emerged as better readers as high school seniors (Hanson and Siegel, 1988). Further, this result held up across all ethnic, social class, and bilingual groups. A more detailed analyses of the high achievement variables showed that the bilingual students actually showed better results, as a group, than the monolingual students in several areas (Hanson, Molina, and Siegel, 1988). One of these was in the amount of remedial educational experiences; monolingual students were more often referred to such programs than bilingual students. This study analyzed these data further to see if these findings still hold true.

Data Sources

The Reading Biographer was completed by the 3,959 high school seniors in the 1985 KRF Study and provided the data used for this study. These high school seniors attended elementary and high schools in 28 school districts across the United States (Hanson and Siegel, 1988). The elementary schools represented about 180 of the 5,000 elementary schools that had participated in the original 1972-73 kindergarten reading studies. The size of this sample, and the fact that about 500 of the participants were from bilingual families (n=496, or about 12.5% of the full sample), provided the necessary variability in terms of the major study variables of interest. These bilingual students were from homes in which the students reported that a language other than English was the dominant language spoken in the home by both the parents and the children. About one-third of these students spoke Spanish, about one-half spoke a European language other than Spanish, and the remainder were in the Asian and Other categories.

For this study, the students were divided into two major groups based on their linguistic background: (1) bilingual (i.e., a language other than English was the dominant language spoken in the home by both the parents and the children) and (2) monolingual (i.e., English was the only language spoken in the home). Measures obtained on each of nine dependent variables (seven achievement and two background) for bilingual students within each of three

social class categories (low, middle, and high) were compared with the scores obtained by the monolingual students within each of these same social class categories. These nine variables and their descriptions are provided in Figure 1.

Insert Figure 1 about here

The study used seven variables measuring achievement; three of these variables were measures of either reading achievement or vocabulary. The "Reading Comprehension" variable consisted of scores obtained on the Aims Instruction Measurement System (AIMS). "Reading Vocabulary" was a measure of the students' vocabulary and was obtained from a therory-driven vocabulary test specifically developed to provide stable, interpretable estimates of respondent vocabulary size (Hanson and Siegel, 1988; Broach, Hanson, and Siegel, 1988). Both of these tests conformed to the requirements for the formulation of another reading achievement variable, "Reading Stage". This variable categorized students' reading skills into one of five different stages, based on the Chall model of reading stages (Chall, 1983).

Four other achievement variables were measures of general school achievement. "Elementary Remediation" and "Secondary Remediation", measured the number of years the students participated remedial classes and/or were held back in elementary and high school. "Elementary Achievement" and "Secondary Achievement" measured student achievement in terms

of the student's usual grade in reading or English and number of days missed each year in school.

The last two variables included in this study, "Kindergarten Reading" and "Family Size, were background variables which previous studies had indicated contribute to students' overall school achievement. The "Kindergarten Reading" variable measured whether or not the students participated in a beginning reading program in kindergarten. Since this variable was a significant factor in the reading achievement of the overall sample, it was considered to be an important variable to consider in this study. "Family Size" measured the number of people in the student's immediate family. Overall, children from larger families tend to do less well in school than those from smaller ones; thus, this was considered another important variable to examine.

Results

Each of the nine dependent variables (See Figure 1) were evaluated for the two language experience groups via descriptive statistics and an two-way ANOVA procedure. Then the separate means for each of the nine variables (within each cell of the ANOVA) were reviewed. Together they showed consistent results regarding the long-term achievement levels of bilingual students, as compared to monolingual students. The complete two-way ANOVA results for one of the dependent variables, "Reading Comprehension", is presented in Table 1.

A summary of the results for all nine dependent variables, including the cell means, are given in Table 2.

Insert Tables 1 and 2 about here

The results in Table 1 show that, as far as overall reading comprehension at the 12th grade level is concerned, there was no statistical difference between the two groups. That is, the fact that the students were bilingual did not either contribute to or detract from their overall level of reading achievement as measured on a norm-referenced reading ability test. This is somewhat surprising. The fact that these bilingual students did not score significantly lower on a test of general reading comprehension is comparable to English speaking students taking a test in a second language and scoring about the same as those students who speak that language fluently.

In fact, as Table 2 indicates, only three variables showed a difference between the bilingual and monolingual populations: "Reading Vocabulary", "Kindergarten Reading", and "Family Size." All of these would logically be expected to show a difference in mean scores. Vocabulary, which is also highly related to reading ability, is largely impacted by the home and family environment (Anderson, et al., 1985). Thus, students who are only exposed to English at school and through extra-curricular activities would naturally have less of an English vocabulary than those students from homes where only English is spoken.

Table 2 also indicates that more of the bilingual students participated in a kindergarten beginning reading program. Since this was a Title III program and implemented largely in schools with disadvantaged populations, this is also be be expected. It simply means that the number of bilingual students who participated in a kindergarten beginning reading program was larger and the students were from poorer families than the monolingual students who participated in the same program. It is important to recall, however, that the earlier studies showed that participating in this program was related to students' overall level of school achievement. Therefore, it is possible that this one factor may have had an impact on the mean scores of the achievement variables in this study.

Finally, the vast majority of this bilingual population was from Hispanic and lower social class populations. Since these populations tend to have more children than the comparison population, the mean for the bilingual population would be expected to be higher for this variable.

More unexpected is the fact that all of the other six variables, which measure school achievement, show no difference between the two groups. Furthermore, by examining and comparing the mean scores on these variables within social class categories (e.g., low monolingual with low bilingual), one can see that the scores on the bilingual students in the high social class categories show a slight advantage over the monolingual students in the same category.

Although this difference is not enough to be statistically significant, it does mean that, on average, the bilingual students from more advantaged homes had less remedial experiences and higher levels of achievement, both in elementary and in high school. However, as might be expected, the two reading achievement scores, "Reading Comprehension" and "Reading Stage", were slightly higher for the monolingual students.

Conclusions

The results of the analyses presented in this paper provide useful information concerning the progress, over time, of bilingual students in our schools. They indicate that these students are generally not at a disadvantage in terms of standard educational measures taken in high school. It also supports the most recent arguments put fourth by Hakuta and Cummins. That is, after controlling for social class and family size, bilingualism has little effects on the general achievement levels of children.

One variable shown to contribute to the overall achievement levels of both bilingual and monolingual students in earlier studies was participating in a beginning reading program in kindergarten. This study showed that significantly more bilingual students participated in this program than monolingual students. Thus, as noted earlier, this variable may have effected the mean scores on the other variables. Therefore, it is recommended that this variable

be examined further. This would involve carrying out an analysis of covariance to determine, if indeed, participating in a kindergarten reading program would impact the other achievement variables.

An earlier study found that the positive effects of early reading instruction generalize to bilingual children. This study showed that, when the effects of students' social class background are taken into account, being bilingual has little or no relationship to higher overall levels of school achievement. Furthermore, if any relationship does exist, it is more than likely a positive one.

Bibliography

Anastasi, A. & Cordova, F. (1953). Some effects of bilingualism upon the intelligence test performance of Puerto Rican children in New York City. Journal of Educational Research, 44, 1-9.

Anderson, R.C., Hiebert, E.H., Scott, J.A., & Wilkerson, I. (1985). Becoming a nation of readers: The report of the Commission on Reading. Urbana, IL: University of Illinois, Center for the Study of Reading.

Ben-Zeev, S. (1977). The influence of bilingualism on cognitive strategy and cognitive development. Child Development, 48, 1009-1018.

Broach, D., Hanson, R. & Siegel, D.F. (1988). Estimating vocabulary size: An example of function-specific test development. Paper presented at the National Council of Measurement in Education, New Orleans, LA.

Chall, J. (1983). Literacy: Trends and explanations. Educational Researcher, 12(9), 3-8.

Crowford, J. (1989). Bilingual education: History, politics, theory, and practice. Trenton, NJ: Crane Publishers.

Cummins, J. (1989). Bilingual education: History, politics, theory, and practice. Trenton, NJ: Crane Publishers.

Cummins, J. (1989). Empowering minority students. Scramento, CA: California Association for Bilingual Education.

Cummins, J. (1982). Tests, achievement, and bilingual students. Rosslyn, VA: National Clearinghouse for Bilingual Students.

Duncan, S.E. & DeAvila, E.A. (1979). Bilingualism and cognition: Some recent findings. NABE Journal, 4, 15-50.

Garcia, E. (1987). Bilingual development and the kindergarten child. Paper presented at the annual meeting of the American Educational Research Association, Washington, D.C.

Goldsmat, M. (1982). Follow-up studies in bilingual education: Issues and options. In J. Gage (Ed.). Longitudinal studies in second language learning and bilingual education. Washington, D.C.: National Clearinghouse for Bilingual Education.

Hakuta, K. (1986). Mirror of Language. New York: Basic Books.

Hakuta, K. & Pease-Alvarez, L. (Eds.). (1992, March). Special Issue on Bilingual Education. Educational Researcher, 21(2).

Hanson, R. & Shutz, R. (1978). A new look at schooling effects from programmatic research and development. In D. Mann (Ed.). Making change happen? New York: Columbia University Press.

Hanson, R. & Siegel, D.F. (1988) Effects on high school seniors of learning to read in kindergarten (Technical Report #1). Garden Grove, CA: Hanson Research Systems.

Hanson, R., Molina, H., & Siegel, D.F.(1988, April). Kindergarten entry age, bilingual background, and early reading instruction as factors in the reading competence of high school seniors. Paper presented at the annual meeting of American Educational Research Association, New Orleans, LA.

Lewelling, V.W. (1991, February). Academic achievement in a second language. Eric Digest (Report No. EDO-FL-91-01). Washington, D.C.: ERIC Clearinghouse on Languages and Linguistics, Center for Applied Linguistics.

Pearl, E. & Lambert, W.E., (1962). The relation of bilingualism to intelligence. Psychological Monographs, 76(27, Whole No. 546).

Smith, M.E. (1931). A study of five bilingual children from the same family. Child Development, 2 184-187.

Smith, M.E. (1939). Some light on the problem of bilingualism as found from a study of the progress in mastery of English among pre-school children of non-American ancestry in Hawaii. Genetic Psychology Monographs, 21, 119-284.

Yoshioka, J.G. (1929). A study of bilingualism. Journal of Genetic Psychology, 36, 473-479.

Youth Policy (1983, June). Issue/Debate: Proposed fiscal 1984 reductions in bilingual education.

BEST COPY AVAILABLE

Study Variables

INDEPENDENT VARIABLES	
Social Class	Social Economic Class 1 = Low 2 = Middle 3 = High
Language	Dominant Language Spoken by both Parents and Student in the home 1 = Foreign 2 = English
DEPENDENT VARIABLES	
Reading Comprehension	Score obtained on the AIMS norm-referenced reading test Range = 1 - 20
Reading Vocabulary	Score obtained on a norm-referenced vocabulary test Range = 1 - 25
Reading Stage	Chall Reading Stage Categories 1 = 3rd - 5th grade reading level 2 = 5th - 7th grade reading level 3 = 7th - 10th grade reading level 4 = 10th - 12th grade reading level
Elementary Remediation	Number of years attended remedial class and/or held back in grades 1 - 6 1 = No remediation 2 = 1 year in remedial classes and/or held back one year 3 = 2 years in remedial classes and/or held back 2 years 4 = 3 or more years in remedial classes or held back 3 years or more
Secondary Remediation	Number of years attended remedial class and/or held back in grades 7 - 12 1 = No remediation 2 = 1 year in remedial classes and/or held back 1 year 3 = 2 years in remedial classes and/or held back 2 years 4 = 3 or more years in remedial classes or held back 3 years or more

(figure continues)

Figure 1 Continued

Study Variables

INDEPENDENT VARIABLES

Elementary Achievement	Usual grade received in reading and usual yearly school attendance in grades 1 - 6 1 = Low Achievement 2 = Average Achievement 3 = Above Average Achievement 4 = Superior Achievement
Secondary Achievement	Usual grade received in English and usual yearly school attendance in grades 7 - 12 1 = Low Achievement 2 = Average Achievement 3 = Above Average Achievement 4 = Superior Achievement
Kindergarten Reading	Participation in a beginning reading program in kindergarten 1 = Did not participate in a beginning reading program in kindergarten 2 = Participated in a beginning reading program in kindergarten
Family Size	Number of people in the immediate family 1 = 2 people in family 2 = 3 people in family 3 = 4 people in family 4 = 5 people in family 5 = 6 people in family 6 = 7 people in family 8 = 8 or more people in family

Figure 1: Dependent and Independent Variables and Coding Descriptions.

Table 1: Two-way ANOVA breakdown for one dependent variable: Reading Comprehension.

Source of Variation	DF	Sum of Sq.	Mean Sq.	f	Sig. f
Main Effects	3	629.8	202.9	14.1	.000
Social Class	2	580.4	290.2	19.5	.000
Language	1	44.3	44.3	3.3	.084
2-way Interaction					
Social Class and Language	2	18.4	9.2	.62	.538
Explained	5	648.2	129.6	8.7	.000
Residual	3018	44867.1	14.6		
Residual	3023	45515.3	15.1		

Table 2: Summary of two-way ANOVA results (Bilingual/Monolingual and three Social Class categories) for the nine dependent variable.

Dependent Variables	Bilingual Students Low SES (n=149)	Mid SES (n=92)	Hi SES (n=14)	Monolingual Students Low SES (n=1580)	Mid SES (n=999)	Hi SES (n=190)	Sig. f
Reading Comprehension	12.6	12.8	13.6	13.0	13.1	14.9	.084
Reading Vocabulary	15.2	16.1	18.0	17.1	17.1	20.9	.000*
Reading Stage	2.6	2.7	3.0	2.8	2.8	3.4	.634
Elementary Remediation	.33	.33	.07	.30	.33	.19	.821
Secondary Remediation	.25	.28	.07	.25	.33	.19	.903
Elementary Achievement	2.8	2.7	3.1	2.7	2.7	3.0	.606
Secondary Achievement	2.4	2.4	3.3	2.4	2.4	2.9	.995
Kindergarten Reading	1.47	1.52	1.38	1.38	1.40	1.35	.002*
Family Size	4.3	4.4	4.0	4.0	3.8	3.7	.000*